

Claims

1. A method of generating an updated surgical plan, the method comprising:

generating a three dimensional (3D) model of a bone,
based on the 3D model, generating a surgical plan

including:

one or more locations on the bone upon which to
dispose one or more fixators, and
one or more settings of one or more struts of the one
or more fixators,

based on the surgical plan, disposing the one or more
fixators on the bone, and

based on data associated with the placement of the one or
more fixators disposed on the bone, generating an updated
surgical plan including updated settings for one or more of the
one or more struts.

2. The method of claim 1, wherein generating a 3D model of a
bone includes:

generating a 3D model based on one or more two dimensional
(2D) images of the bone and one or more 3D bone templates.

3. The method of claim 1, wherein the one or more locations
include one or more locations for one or more of an osteotomy
and a coricotomy.

4. The method of claim 1, wherein the one or more locations on the bone upon which to dispose the one or more fixators include one or more locations on the bone upon which to dispose one or more pins for receiving the one or more fixators.

5. The method of claim 1, wherein the one or more settings of the one or more struts include one or more periodic adjustments of the one or more struts.

6. The method of claim 1, wherein the surgical plan further includes one or more surgical tools for disposing the one or more fixators on the bone.

7. The method of claim 1, wherein the data associated with the placement of the one or more fixators disposed on the bone include one or more images of the one or more fixators disposed on the bone.

8. The method of claim 7, wherein the one or more images include one or more 2D images.

9. The method of claim 8, wherein the one or more 2D images are orthogonal to each other.

10. The method of claim 8, wherein the one or more 2D images include X-ray images.

11. The method of claim 1, further comprising:

 associating the surgical plan with one or more bone contours based on the 3D model of the bone,
 storing the surgical plan, and

generating a new surgical plan based on the stored surgical plan.

12. The method of claim 11, wherein generating a new surgical plan includes:

determining whether the new surgical plan is related to the stored surgical plan, and

based on whether the new surgical plan is related to the stored surgical plan, generating the new surgical plan based on the stored surgical plan.

13. The method of claim 12, wherein the new surgical plan is associated with one or more new bone contours based on a 3D model of a new bone, and wherein determining includes:

determining whether the stored surgical plan is associated with one or more bone contours that are similar to one or more of the one or more new bone contours associated with the new surgical plan.

14. The method of claim 1, wherein generating a surgical plan includes:

generating a simulation of the surgical plan.

15. The method of claim 14, wherein the simulation includes one or more 3D images based on the surgical plan.

16. The method of claim 14, wherein the simulation includes animated images based on the surgical plan.

17. The method of claim 1, wherein generating a surgical plan includes:

receiving at a server images of the bone from a client,
generating the surgical plan at the server, and
providing the surgical plan from the server to the client.

18. The method of claim 17, wherein generating the updated surgical plan includes:

receiving at the server the data associated with the
placement of the one or more fixators disposed on the bone from
the client,

generating the updated plan at the server, and
providing the updated surgical plan from the server to the
client.

19. The method of claim 17, wherein the data includes one or
more 2D images of the one or more fixators disposed on the bone.

20. The method of claim 17, wherein providing the surgical plan
from the client to the server includes:

charging a fee to provide the surgical plan from the client
to the server, and

based on payment of the fee, providing the surgical plan
from the client to the server.